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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/636,124	08/10/2000	Damon F. Kvamme	KLA1P028A	6325

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EXAMINER

PHAM, HOA Q

ART UNIT PAPER NUMBER

2877

DATE MAILED: 03/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/636,124

Applicant(s)

KVAMME ET AL.

Examiner

Hoa Q. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41, 44, 45 and 47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 47 is/are allowed.
- 6) ☒ Claim(s) 1-18, 20-41, 44 and 45 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 23 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karaki et al (5,130,965).

Regarding claims 23 and 32, Karaki et al discloses a light source (1) for emitting a light beam along an optical axis (B), a diffraction grating (4) disposed along the optical axis, the diffraction grating being arranged for separating the light beam into a plurality of light beam (B1, B2, B3) which are used to form scanning spots on the surface of a substrate (8), the grating spacing and rotation is controlled by controller (20, 13A). Karaki et al does not explicitly teach that each scanning spots having a specified overlap. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to control the space of the grating or the rotating angle of the grating so that the scanning spots having a specified overlap to ensure that entire surface is scanned.

3. Claims 1-18, 20-22, 24-31, 33-41, and 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanada et al (6,084,716) in view of Shikichi et al (or Karaki et al) and Shiozawa et al (5,726,740).

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Regarding claims 1-18, 24, 25, 33, and 38, Sanada et al (of record) discloses a single light emitted from a light source, a first set of optical elements arranged for separating the incident light beam into a plurality of beams, directing the plurality of beams to intersect with the surface of the substrate, focusing the plurality of the light beams to a plurality of scanning spots on the surface of the substrate and a light detector arrangement for receiving a plurality of the beams passed through the substrate (see abstract). As understood, Sanada et al teaches a fifth embodiment in which a plurality of detectors is used to receive the plurality of light beams passed through the substrate (column 6, line 62 through column 7, line 9). It is not clear that the detectors taught by Sanada et al are individual light detectors that each receive individual ones of the plurality of transmitted light or reflected light beam from the tested object or they are similar to photosensitive elements of the detector assembly (2501 or 2909) (see figures 15-18). If the detectors are not individual light detectors, such a feature is known in the art, for example as taught by Shikichi et al or Karaki et al. These references teach the use of individual light detectors that each receive individual one of the plurality of reflected light beams from the tested object (figure 4 of Karaki et al or figure 1 of Shikichi et al). It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the detector of Sanada et al by a plurality of individual detectors as taught by Shikichi or Karaki because they are function in the same manner. In addition, using individual detectors would increase the signal to noise ratio, thus an accuracy of the measurement is obtained.

Regarding claim 20, see objective lens (308) in figure 12 of Sanada et al.

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Regarding claim 21, see column 23 lines 15 –22 of Sanada et al for X-stage 1002 and Y-stage 1004.

Regarding claims 22, 35-40, see column 3, line 5-7 of Sanada et al for comparison between the reference signal and scan signal.

Regarding claims 26-28, 33, see column 4, lines 33-41 of Sanada et al for simultaneously detecting the reflected light and transmitted light.

Regarding claims 29-31, and 34, see column 1, lines 5-10 of Sanada et al for inspecting substrate, masks, reticles, or wafers.

Regarding claims 41 and 44-45, these claims are similar to claim 1 except that the second optical arrangement including a prism for directing individual one of the plurality of reflected or transmitted light to individual light detectors. However, such a feature is known in the art as taught by Shiozawa et al. Shiozawa et al teaches the use of a prism (6) for directing a plurality of light beams onto the surface of integrator (10) at different locations (see figures 3A, 7A, 8A, 11B, 12B, 15B, 15C). Those of ordinary skill in the art at the time the invention was made to replace the second optical arrangement of Sanada et al by an arrangement of Shizawa et al because they are equivalent in function. A substitution for each other is generally recognized as being within the level of ordinary skill in the art.

Allowable Subject Matter

4. Claim 47 is allowed.

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5. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

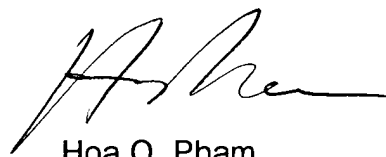
Response to Arguments

6. Applicant's arguments with respect to claims 1-41, 44, 45, 47 have been considered but are moot in view of the new ground(s) of rejection.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (703) 308-4808. The examiner can normally be reached on 6:30 AM to 5 PM Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (703) 308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Hoa Q. Pham
Primary Examiner
Art Unit 2877

Pham/hp
March 17, 2003